

REMARKS

Examiner is thanked for carefully reviewing the present application. The present amendment is in response to the Office Action mailed on January 03, 2005 regarding claims 1-15.

Favorable reconsideration is requested in view of the above amendments and the following remarks.

Claim 2 is cancelled, and the limitation thereof is added to claim 1. Claims 3 and 11-13 are amended to be dependent on claim 1. Claims 16-20 are added. Thus, claims 1 and 3-20 are now pending in the application. The amended claims contain no new matter and do not raise new issues.

Claim Rejections under 35 U.S.C. §102(b)

Claim 1 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Lange (US 6064866). In response thereto, claim 1 is amended to include the limitations of claim 2 to overcome this rejection.

As explicitly recited in claim 1, the claimed invention discloses a switchable high frequency bandpass filter comprising the switchable LC resonator. The switchable LC resonator comprises: an inductive unit coupled between the input node and ground; a first capacitive unit coupled between the input node and ground such that the inductive unit and the first capacitive unit construct a first-state parallel LC resonant circuit; and a second capacitive unit coupled between the input node and ground such that the inductive unit, the first capacitive unit, and the second capacitive unit construct a second-state parallel LC resonant circuit.

In contrast, as stated in column 4 lines 1-16, Lange's bandpass filter 1 shown in the FIGURE has a coupling capacitor 35 at its input and precedes a coupling inductance 36, and the tunable resonant circuit of the bandpass filter 1 consists of an inductance 38 coupled to the reference potential via a capacitor 37 and a capacitance diode 39 coupled to this inductance at the anode end and a capacitor 40 connected to this inductance at the cathode end, and the junction point between the inductance 38 and the capacitance diode 39 is connected to the coupling inductance 36. Lange's bandpass filter 1 further comprises a second resonant circuit,

wherein a capacitor 41 is provided which is connected to the capacitor 40, the capacitor 41 is coupled to the cathode of a second capacitance diode 42 which is connected to a resonant circuit inductance 43 at the anode end, which inductance is coupled to the reference potential via a capacitor 44.

Apparently, Lange's LC resonator formed from the elements 31, 33, 32, 38, 39, 40, 41 and 37, etc. are very different from the switchable LC resonator claimed in claim 1 of the claimed invention.

Accordingly, Applicant respectfully requests that the section 102(e) rejections be withdrawn.

Claim Rejections under 35 U.S.C. §103(a)

Claims 2-5, 11 and 12 are rejected under 35 U.S.C.103(a) as being unpatentable over Lange in view of Satoh (US 6895228). Claims 6-10 are rejected under 35 U.S.C.103(a) as being unpatentable over Lange and Satoh in view of Damgaard et al. (US 6208875). Claims 13-15 are rejected under 35 U.S.C.103(a) as being unpatentable over Lange and Satoh in view of Watanabe et al. (US6937845). The rejections are respectfully traversed.

The PTO further specifies in MPEP §2142 that:

The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.

The limitation of the original claim 2 is added to the amended claim 1, and thus the response to the rejection of the original claim 2 is now based on the amended claim 1.

As explicitly recited in the amended claim 1, the claimed invention discloses a switchable high frequency **bandpass filter (BPF)** comprising a switchable LC resonator 101 used for providing a plurality of switchable filter transfer functions, and the switchable filter transfer functions are used for performing bandpass functions. In contrast, as stated in column 2, lines 36-38, Satoh teaches a **low-pass filter (LPF)** with a high pass filter (HPF section 3) in a high frequency (see Fig. 1 and Fig. 2) or with a BPF section 31 (see Fig. 7 and

Fig. 8); and a switch circuit included in the HPF section 3 or the BPF section 31 to change the HPF section 3 or the BPF section 31 to the rejection band or the pass band, i.e. Satoh's switch circuit is used to control whether the HPF section 3 or the BPF section 31 should be functioned in addition to the LPF section 4 and/or the LPF section 5(or 32). Apparently, Satoh's patent is directed to a LPF, but the claim 1 of the claimed invention is to a BPF. For achieving the BPF, Satoh needs to combine another HPF with his LPF, but the claimed invention just uses one single resonator to achieve the BPF. In fact, Satoh may be able to provide a **downsized and sophisticated LPF**, but with the addition of a HPF, his combined filter definitely cannot achieve a **downsized and sophisticated BPF**. Just as described above, Lange is also directed to a BPF. Therefore, one of the ordinary skill in the art at the time the invention was made may be able to provide a downsized and sophisticated **LPF** by applying Satoh's technique in the filter of Lange, but definitely cannot provide a downsized and sophisticated **BPF**.

Further, as explicitly recited in the amended claim 1, the switchable LC resonator of the claimed invention comprises an inductive unit, a first capacitive unit and a second capacitive unit, wherein the inductive unit is coupled between the input node and ground; the first capacitive unit is coupled between the input node and ground such that the inductive unit and the first capacitive unit construct a first-state parallel LC resonant circuit; and the second capacitive unit coupled between the **input node and ground** such that the inductive unit, the first capacitive unit, and the second capacitive unit construct a second-state parallel LC resonant circuit. In contrast, as shown in Satoh's FIG. 4 and the related description, the series circuit formed of capacitor 22 and inductor 28 is not a capacitive unit, and is coupled between the capacitor 19 and ground, but not between the input node and ground. Therefore, the series circuit formed of capacitor 22 and inductor 28 is different from the second capacitive unit taught in claim 2 of the claimed invention. Moreover, as described in column 5 lines 7-15, the circuit formed of inductors 26, 27 and 29 and capacitor 21 is a L-C resonator itself, and the series circuit formed of capacitor 22 and inductor 28 is also a L-C resonator itself. However, according to the amended claim 1 of the claimed invention, the inductive unit has to work together with the first capacitive unit to construct a first-state parallel LC resonant circuit, and the second capacitive unit has to work together with the inductive unit and the first

capacitive unit to construct a second-state parallel LC resonant circuit. Therefore, Satoh's circuit formed of inductors 26, 27 and 29 and capacitor 21 cannot be the inductive unit taught in the amended claim 1 of the claimed invention; and Satoh's series circuit formed of capacitor 22 and inductor 28 cannot be the second capacitive unit taught in the amended claim 1 of the claimed invention.

In view of the foregoing, Applicant respectfully submits that the independent claim 1 is patentable over the cited references and in condition for allowance. Further, Applicant respectfully submits that the dependent claims 3-15, which ultimately depend from claim 1, are likewise patentable over the cited references and in condition for allowance. Applicant respectfully requests that the section 103(a) rejections be withdrawn.


New claims 16-20

For at least the reasons described above, Applicant respectfully submits that new claims 16-20 are patentable over the cited references and in condition for allowance.

CONCLUSION

In light of the above remarks, all objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited. If there are any remaining issues to be resolved, the applicant requests that the Examiner contact the undersigned attorney for a telephone interview. If any other fees are due in connection with the filing of this paper, then the Commissioner is authorized to charge such fees to Deposit Account No. 50-0805 (Order No. JLINP166/TLC).

Respectfully submitted,
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